

Cab39l Cas9-CKO Strategy

Designer: Lingyan Wu

Reviewer: Miaomiao Cui

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Project Overview

Project Name

Cab39l

Project type

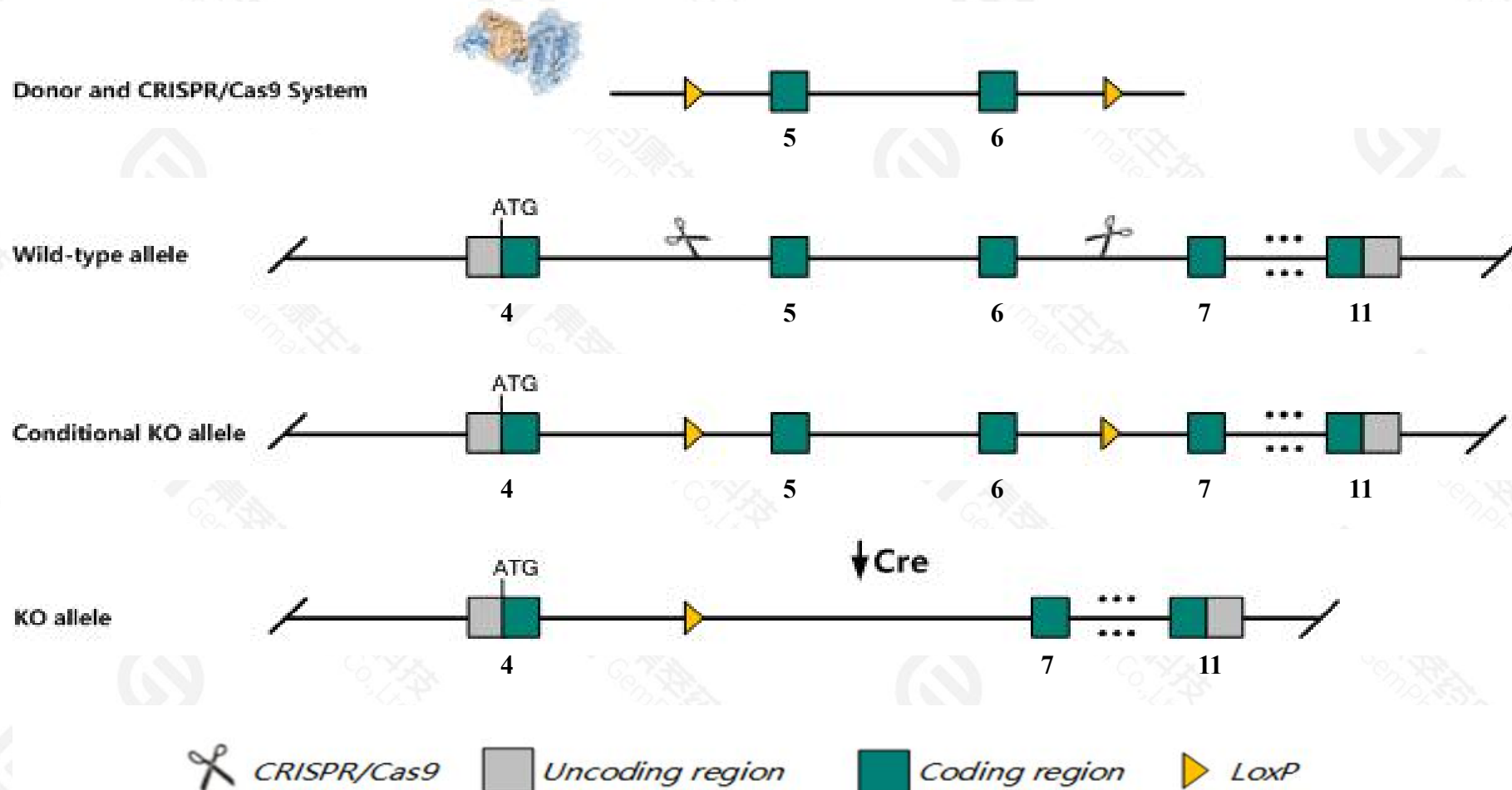
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cab39l* gene. The schematic diagram is as follows:



- The *Cab39l* gene has 6 transcripts. According to the structure of *Cab39l* gene, exon5-exon6 of *Cab39l*-201(ENSMUST00000022553.6) transcript is recommended as the knockout region. The region contains 284bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cab39l* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- Transcript *Cab39l*-204 may not be affected.
- The *Cab39l* gene is located on the Chr14. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Cab39l calcium binding protein 39-like [Mus musculus (house mouse)]

Gene ID: 69008, updated on 17-Dec-2020

Summary



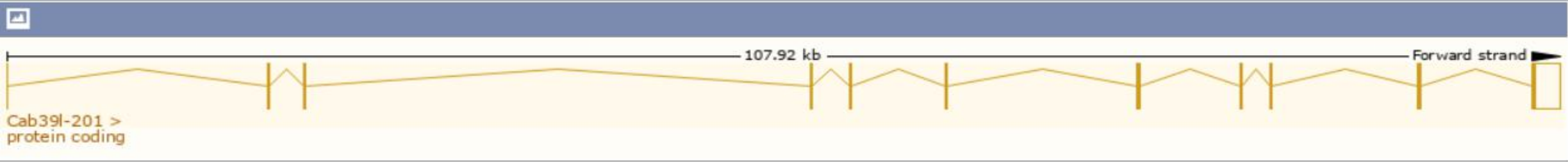
Official Symbol	Cab39l provided by MGI
Official Full Name	calcium binding protein 39-like provided by MGI
Primary source	MGI:MGI:1914081
See related	Ensembl:ENSMUSG00000021981
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1500031K13Rik, 2810425O13Rik, 4930520C08Rik, AA589432, MO, MO2L
Expression	Ubiquitous expression in bladder adult (RPKM 15.1), testis adult (RPKM 7.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

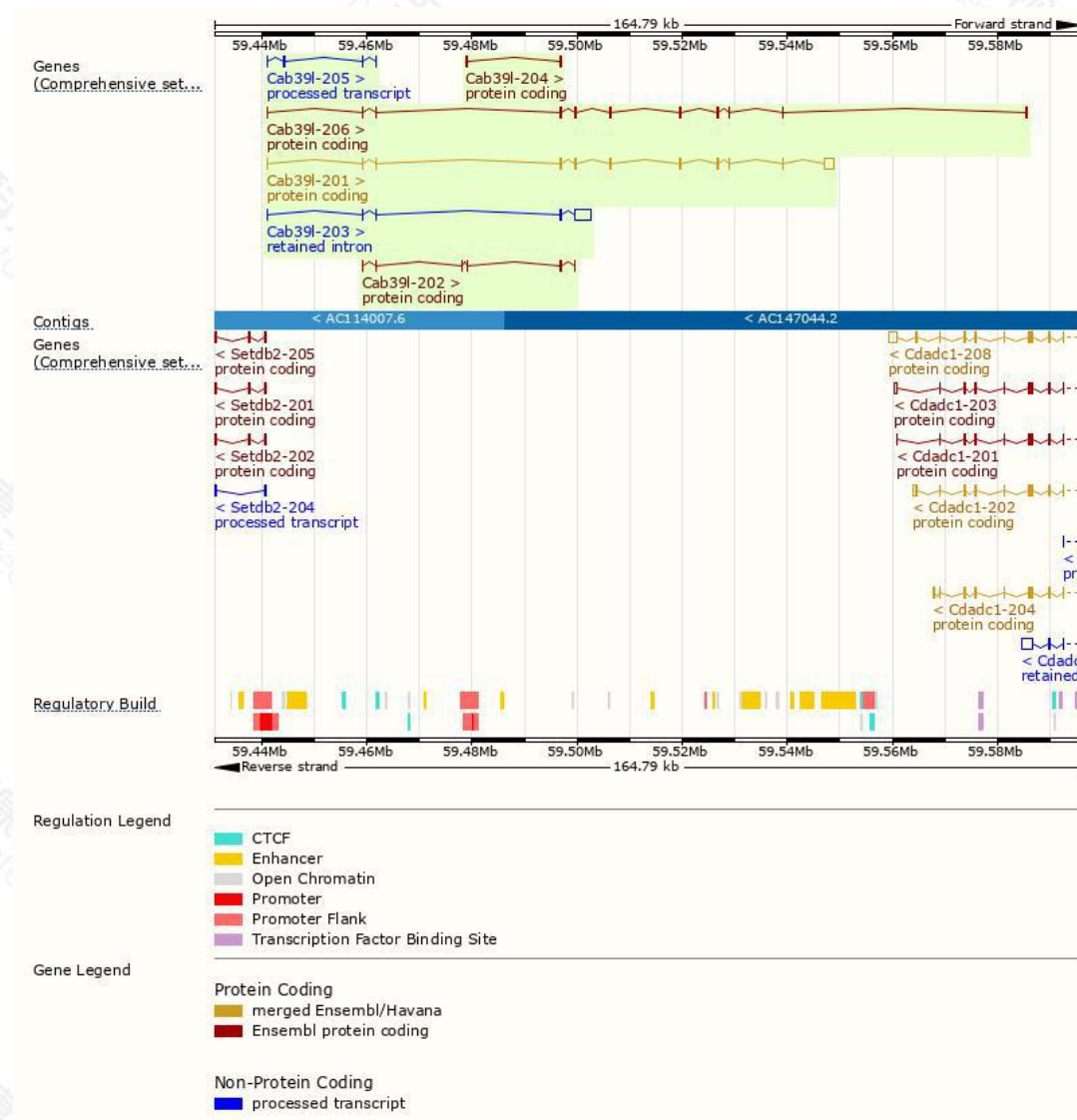
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cab39l-201	ENSMUST00000022553.6	3037	337aa	Protein coding	CCDS27171		TSL:1 , GENCODE basic , APPRIS P1 ,
Cab39l-206	ENSMUST00000225595.2	1380	296aa	Protein coding	-		GENCODE basic ,
Cab39l-202	ENSMUST00000223678.2	623	79aa	Protein coding	-		CDS 3' incomplete ,
Cab39l-204	ENSMUST00000224893.2	496	32aa	Protein coding	-		CDS 3' incomplete ,
Cab39l-205	ENSMUST00000225149.2	372	No protein	Processed transcript	-		
Cab39l-203	ENSMUST00000224281.2	3546	No protein	Retained intron	-		

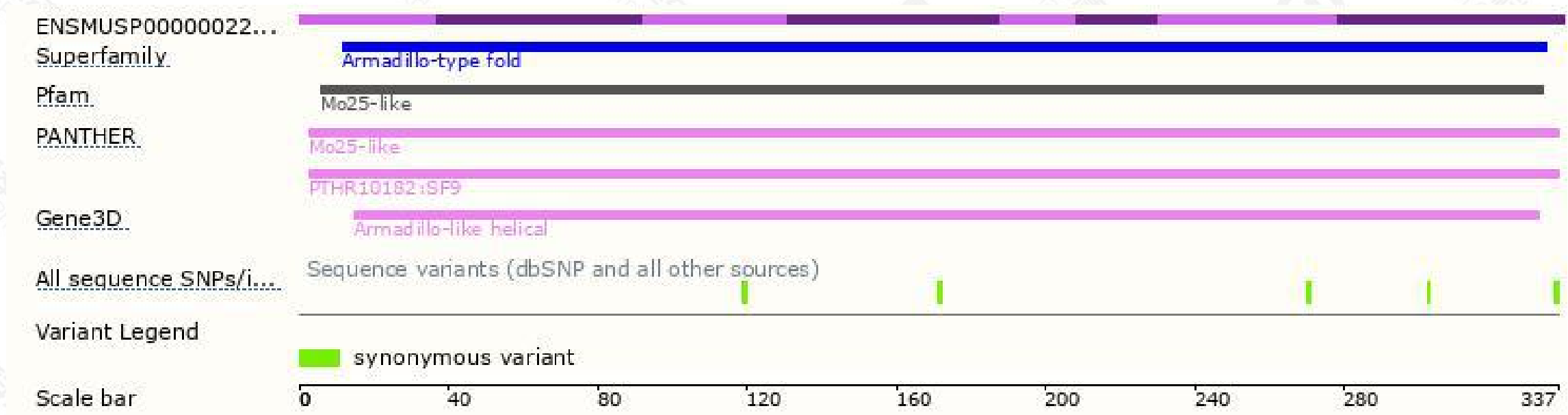
The strategy is based on the design of *Cab39l-201* transcript,the transcription is shown below:



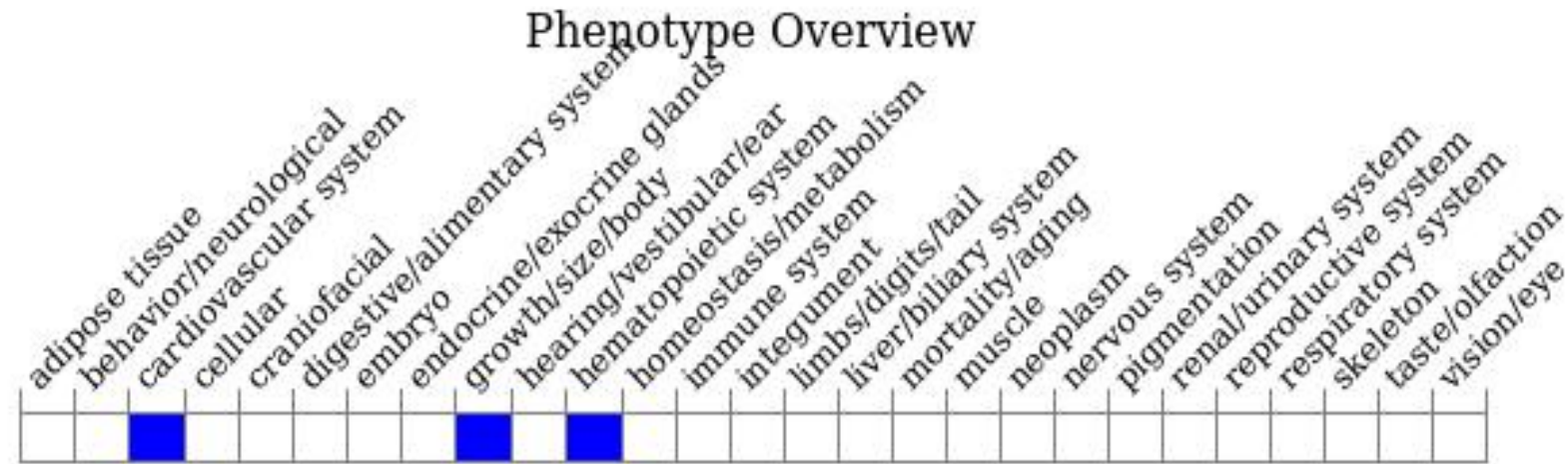
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

If you have any questions, you are welcome to inquire.
Tel: 400-9660890

